Hantek HDG2062B

Hantek HDG2062B 2-Channel 60MHz DDS Arbitrary Waveform Function Generator User Manual

Model: HDG2062B

1. Introduction

The Hantek HDG2062B is a high-performance 2-channel DDS (Direct Digital Synthesis) Arbitrary Waveform Function Generator designed for a wide range of applications in electronics testing, education, and research. It offers a maximum sine output frequency of 60MHz, a sample rate of 250MSa/s, and 16-bit vertical resolution, enabling the generation of precise and complex waveforms. Key features include 64M memory depth for arbitrary waveforms, 16 channels of digital output, and support for various modulation types such as AM, FM, PM, ASK, FSK, PSK, and PWM. The device is equipped with a 7-inch 800x480 TFT display and multiple interfaces for connectivity.

2. Safety Information

To ensure safe operation and prevent damage to the instrument, please observe the following precautions:

- Always connect the instrument to a properly grounded power outlet.
- Do not operate the instrument in wet or damp conditions.
- Avoid operating the instrument in explosive atmospheres.
- Ensure proper ventilation to prevent overheating.
- Do not attempt to service the instrument unless you are qualified to do so. Refer all servicing to qualified personnel.
- Use only the specified power adapter and accessories.

3. Package Contents

Verify that all items are present in the package upon unboxing:

- Hantek HDG2062B Function Generator Unit
- Power Cord
- USB Cable
- Quick Start Guide

- CD-ROM (containing user manual and software)
- BNC to Alligator Clip Cables (2x)

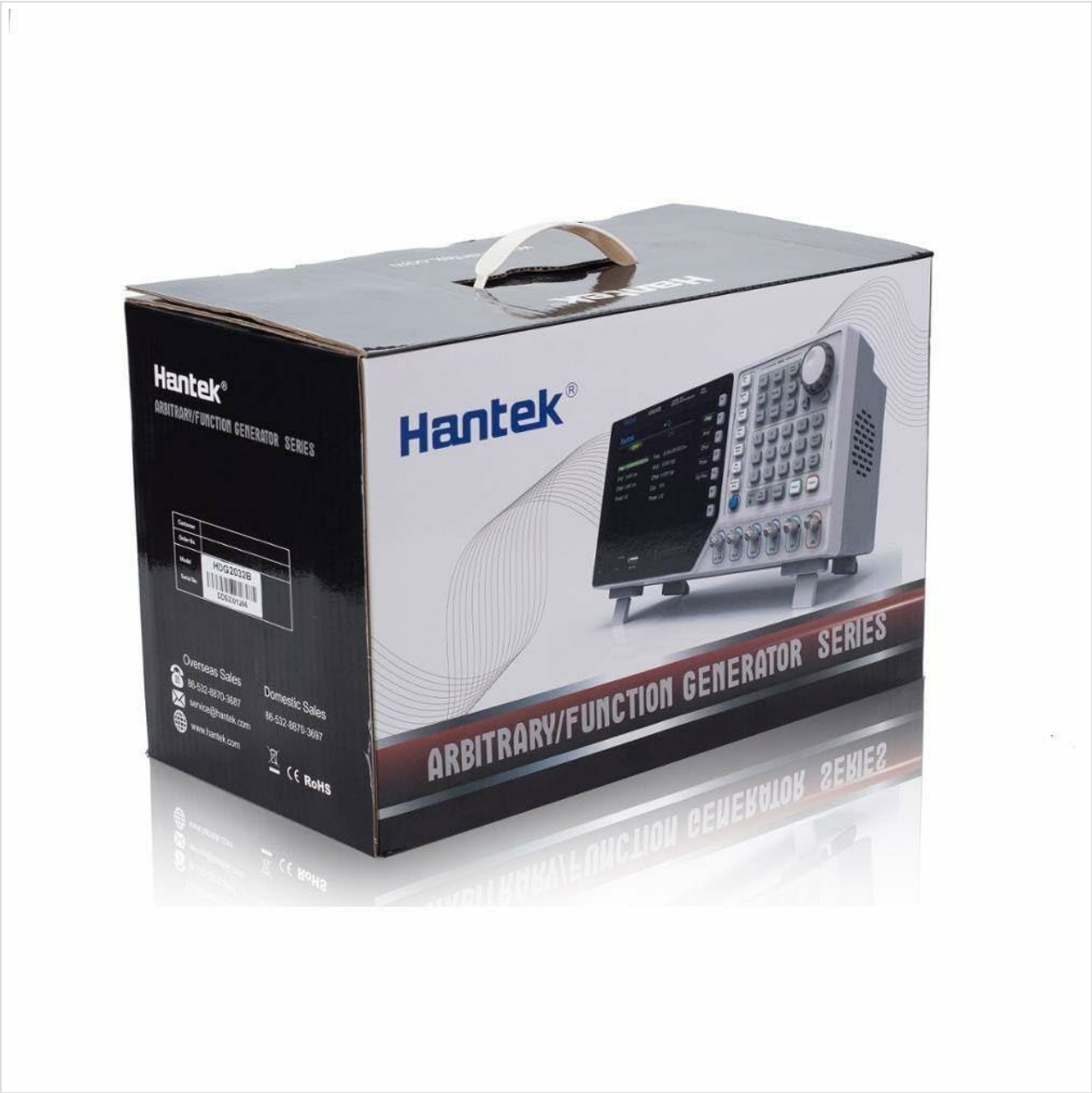

Figure 3.1: The Hantek HDG2062B function generator packaging box, indicating the product series and brand.

4. Product Overview

4.1 Front Panel

The front panel features the 7-inch TFT display, control buttons, a rotary knob, and output connectors for Channel 1 (CH1) and Channel 2 (CH2). The buttons are logically grouped for waveform selection, modulation, utility functions, and numerical input.

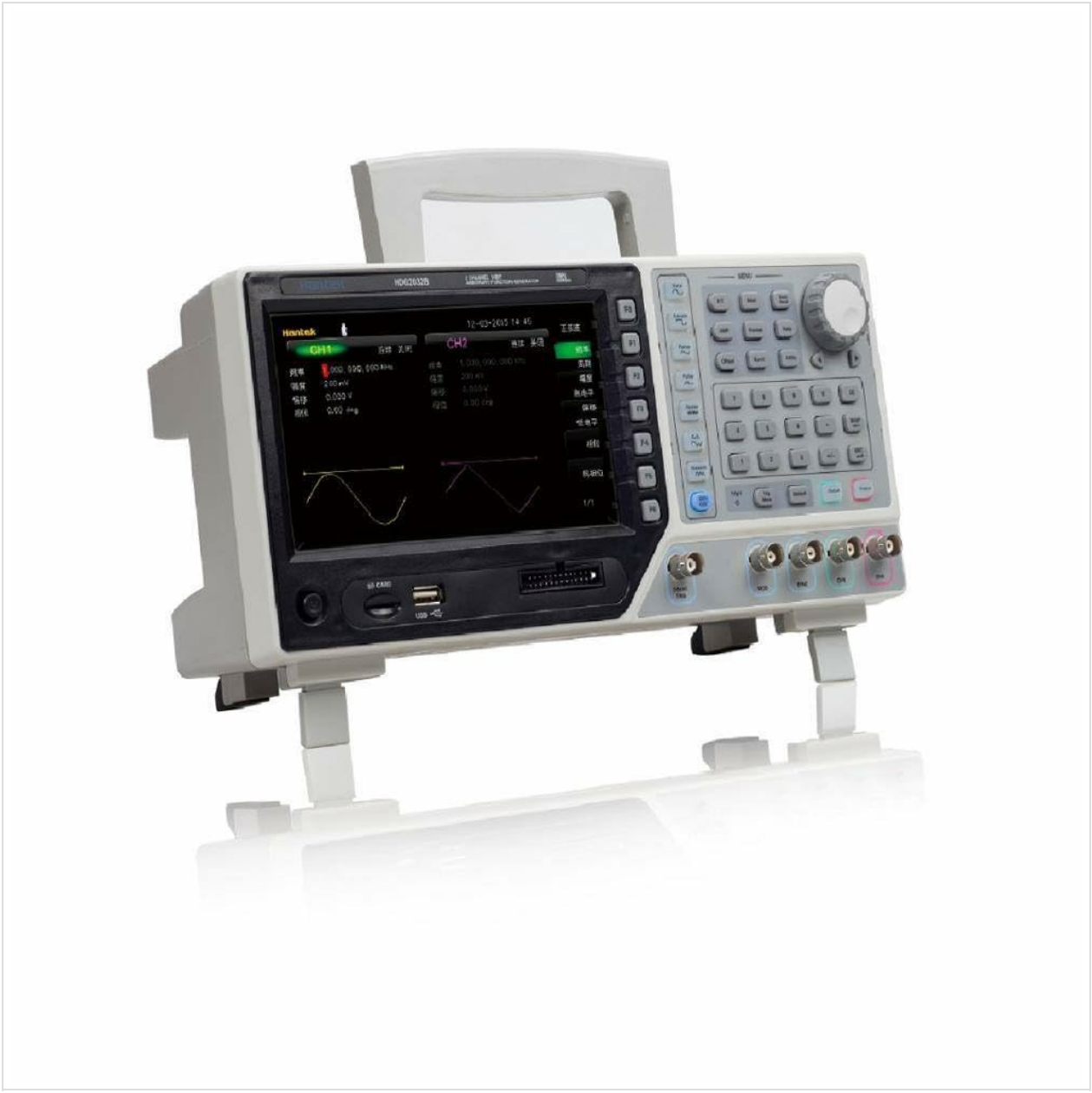

Figure 4.1: Front view of the Hantek HDG2062B, showing the display, control panel, and output ports.

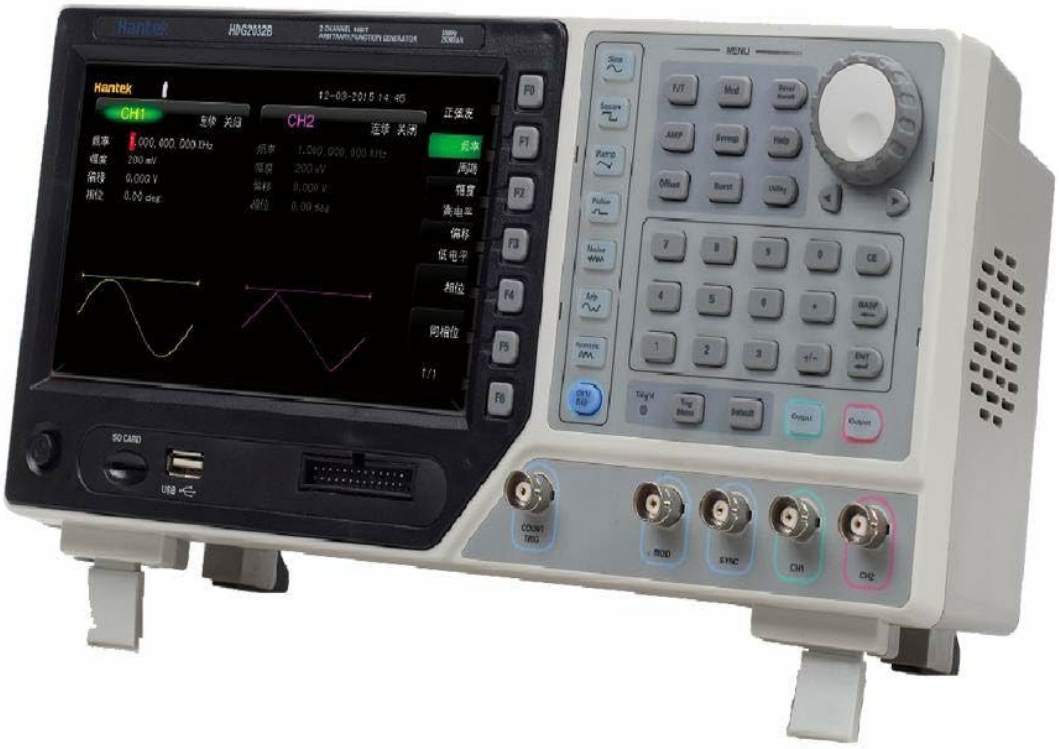

Figure 4.2: Angled front view highlighting the control buttons and BNC connectors for waveform output.

4.2 Interfaces

The instrument includes several interfaces for connectivity and data transfer:

- **USB Host:** For connecting USB storage devices to save/load waveforms and settings.
- **USB Device:** For connecting to a computer for remote control and data transfer.
- **LAN:** For network connectivity and remote control.
- **Digital Output:** A multi-pin connector for 16 channels of digital output.

5. Setup

Follow these steps to set up your HDG2062B function generator:

1. **Power Connection:** Connect the provided power cord to the AC inlet on the rear panel of the instrument and then to a grounded power outlet.
2. **Power On:** Press the power button located on the front panel to turn on the instrument. The display will illuminate, and the system will boot up.
3. **Initial Check:** After booting, the instrument will display the default waveform settings. Ensure the display is clear

and responsive.

4. **Connect Outputs:** Connect BNC cables from the CH1 or CH2 output ports to your desired load or measurement device (e.g., oscilloscope, circuit).

6. Operating Instructions

6.1 Basic Waveform Generation

To generate a standard waveform:

1. Press the **Wave** button to select the desired waveform type (e.g., Sine, Square, Ramp, Pulse, Noise).
2. Use the numeric keypad or the rotary knob to set the **Frequency**. Press the corresponding soft key on the display to confirm or change units.
3. Adjust the **Amplitude** (peak-to-peak voltage) using the dedicated soft key and rotary knob/keypad.
4. Set the **Offset** (DC offset) if required.
5. Press the **Output On/Off** button for the selected channel (CH1 or CH2) to enable the waveform output.

6.2 Arbitrary Waveform Generation

The HDG2062B supports arbitrary waveform generation with 64M memory depth and 16-bit resolution.

- **Creating Arbitrary Waveforms:** Waveforms can be created using the included PC software, imported from a USB drive, or defined point-by-point on the instrument.
- **Loading Arbitrary Waveforms:** Navigate to the 'Arb' menu, select 'Load', and choose your desired waveform from internal memory or a connected USB device.
- **Outputting Arbitrary Waveforms:** Once loaded, set the frequency, amplitude, and offset as with standard waveforms, then enable the output.

6.3 Modulation Functions

The instrument supports various modulation types:

- Press the **Mod** button to access modulation settings.
- Select the desired modulation type: AM (Amplitude Modulation), FM (Frequency Modulation), PM (Phase Modulation), ASK (Amplitude Shift Keying), FSK (Frequency Shift Keying), PSK (Phase Shift Keying), or PWM (Pulse Width Modulation).
- Configure the modulation parameters (e.g., modulation depth, frequency deviation, carrier frequency) using the soft keys and rotary knob/keypad.
- Enable the modulation.

6.4 Digital Output

The HDG2062B features 16 channels of digital output, allowing for the generation of mixed signals.

- Connect a suitable cable to the digital output connector.
- Access the digital output settings through the menu.
- Configure the pattern and timing for each of the 16 digital channels.

6.5 Frequency Counter

The built-in 80MHz frequency counter can measure external signals.

- Connect the external signal to the dedicated counter input (if available, or through a general-purpose input).

- Select the 'Counter' function from the utility menu.
- The display will show the measured frequency of the input signal.

7. Maintenance

Proper maintenance ensures the longevity and accuracy of your instrument:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the instrument. For stubborn dirt, a slightly damp cloth with mild detergent can be used. Avoid abrasive cleaners or solvents.
- **Storage:** When not in use, store the instrument in a clean, dry environment, away from direct sunlight and extreme temperatures.
- **Calibration:** Periodic calibration by qualified service personnel is recommended to maintain measurement accuracy.

8. Troubleshooting

If you encounter issues, refer to the following common troubleshooting steps:

- **No Power:** Ensure the power cord is securely connected to both the instrument and a working power outlet. Check the power button.
- **No Output Signal:** Verify that the output for the selected channel (CH1/CH2) is enabled. Check cable connections to the load. Ensure amplitude and frequency settings are valid.
- **Incorrect Waveform:** Confirm the correct waveform type is selected. Check frequency, amplitude, and offset settings.
- **Display Issues:** If the display is blank or distorted, try restarting the instrument. If the problem persists, contact technical support.

9. Specifications

Feature	Specification
Channels	2
Max Sine Output Frequency	60MHz
Sample Rate	250MSa/s
Vertical Resolution	16-bit
Memory Depth	64M points
Digital Output	16 channels
Modulation Types	AM, FM, PM, ASK, FSK, PSK, PWM
Timebase Standard	TCXO (OCXO optional)
Display	7-inch, 64K true color TFT, WVGA (800x480)
Interfaces	USB Host, USB Device, LAN

Feature	Specification
Frequency Counter	80MHz

10. Warranty and Support

For detailed warranty information, please refer to the warranty card included with your product or visit the official Hantek website. For technical support, software updates, or service inquiries, contact Hantek customer service through their official channels. Keep your purchase receipt as proof of purchase for warranty claims.

Related Documents - HDG2062B

	Hantek HDG3000B Series Arbitrary Waveform Signal Generator Programming Manual This programming manual provides detailed SCPI command instructions for controlling the Hantek HDG3000B series arbitrary waveform signal generators, enabling users to programmatically manage device functions and configurations.
	Hantek DSO2D20 Series Digital Oscilloscope User Manual Comprehensive user manual for the Hantek DSO2D20 series digital oscilloscopes, detailing features, operation, troubleshooting, and specifications for accurate signal analysis.
	Hantek2D82 Automotive Diagnostic Oscilloscope User Manual | Comprehensive Guide Explore the Hantek2D82 Automotive Diagnostic Oscilloscope. This user manual provides detailed information on its features, operation, safety, technical specifications, and troubleshooting for automotive diagnostics, DMM, and waveform generation.

	[Hantek DPO7000 Series Digital Oscilloscope Datasheet] Comprehensive datasheet for the Hantek DPO7000 Series Digital Oscilloscope, detailing features, technical specifications, ordering information, and optional upgrades for these versatile 8-in-1 instruments.
	[Hantek DSO2D20 Series Digital Oscilloscope Quick Guide] A concise and SEO-optimized HTML guide for the Hantek DSO2D20 Series Digital Oscilloscope, covering safety, product overview, preparation, and remote control.
	[Hantek 6022BE User Manual: Portable PC Oscilloscope Guide] Download the Hantek 6022BE user manual for this portable PC-based USB oscilloscope. Learn about its features, setup, operation, and troubleshooting for testing, research, and educational applications.